

### **ABSTRACT OF THE DISCLOSURE**

Disclosed is a high speed optical signal processor which includes a saturable absorber area including a substrate, an active layer, a clad layer and a first upper electrode which are sequentially formed on one face of the substrate, and a first lower electrode formed on the other face of the substrate; and a gain-clamped optical amplifier area including a substrate having a diffraction grating for generating a laser beam, an active layer, a clad layer and a second upper electrode which are sequentially formed on one face of the substrate, and a second lower electrode formed on the other face of the substrate, the second upper electrode being isolated from the first upper electrode of the saturable absorber area.